SEMICONDUCTOR DEVICE STRUCTURE AND METHOD FOR FORMING

Abstract of the Disclosure

A semiconductor device structure has trenches of two widths or more. The smallest widths are to maximize density. The greater widths may be required because of more demanding isolation, for example, in the case of non-volatile memories. These more demanding, wider isolation trenches are lined with a high quality grown oxide as part of the process for achieving the desired result of high quality isolation. For the case of the narrowest trenches, the additional liner causes the aspect ratio, the ratio of the depth of the trench to the width of the trench, to increase. Subsequent deposition of insulating material to fill the trenches with the highest aspect ratios can result in voids that can ultimately result in degraded yields. These voids are avoided by etching at least a portion of the liners of those trenches with the highest aspect ratios to reduce the aspect ratio to acceptable levels.